AMENDMENT

Please amend the above-captioned application as follows:

In The Specification:

Please amend the specification as follows.

Please replace the pending title and replace with the following new title:

B1 --METHODS FOR IDENTIFYING ANTI-MICROBIAL AGENTS--

On page 1, after the title, please insert the following paragraph:

-- CROSS-REFERENCES TO RELATED APPLICATIONS

B2 The present application is a divisional of and claims the benefit of priority under 35 USC 120 of U.S. application serial no. (USSN) 08/971,090, filed November 14, 1997, issued as USPN 6,228,579, on May 8, 2001. This application and patent are explicitly incorporated herein by reference in their entirety and for all purposes.--

In The Claims:

Please add the following new claims.

--89. (NEW) A method of screening for an antimicrobial agent, comprising the steps of:

(a) providing a test compound, a microbial proliferation gene and a first and a second sample of a first microorganism,

B3 wherein the microbial proliferation gene is identified by introducing an exogenous nucleic acid into the first microorganism and the exogenous nucleic acid has substantial sequence identity to a microbial gene endogenous to the first microorganism and is a random fragment or a random sequence and is derived from a second microorganism, and, identifying the endogenous gene as a microbial proliferation gene by comparing the proliferation or viability of the first microorganism when the exogenous nucleic acid is expressed in or introduced with the proliferation or viability of the first microorganism when the exogenous nucleic acid is not present or not expressed,

(b) introducing the microbial proliferation gene into the first microorganism of the first sample;

(c) contacting the test compound with the first sample and the second microorganism samples; and

(d) determining the effect of the test compound on the first and the second microorganism samples, wherein the test compound is identified as an antimicrobial agent by comparing the effect of contacting the test compound to the first sample, where the exogenous nucleic acid is expressed or introduced, to the effect of contacting the test compound to the second sample, where the exogenous nucleic acid is not present or is not expressed, and the effect of the test compound on the contacted microorganism differs between the first and the second samples, thereby identifying the test compound as an antimicrobial agent.

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90. (NEW) A method of screening for antibacterial agents, comprising the steps of:

(a) providing a test compound, a microbial proliferation gene and a first and a second sample of a first bacterium,

wherein the bacterial proliferation gene is identified by introducing an exogenous nucleic acid into the first bacterium and the exogenous nucleic acid has substantial sequence identity to a bacterial gene endogenous to the first bacterium and the exogenous nucleic acid is a random fragment or a random sequence and is derived from a second bacterium, and, identifying the endogenous gene as a bacterial proliferation gene by comparing the proliferation or viability of the first bacterium when the exogenous nucleic acid is expressed in or introduced with the proliferation or viability of the first bacterium when the exogenous nucleic acid is not present or not expressed,

(b) introducing the bacterial proliferation gene into the first bacterium of the first sample;

(c) contacting the test compound with the first sample and the second bacterium samples; and

(d) determining the effect of the test compound on the first and the second bacterial samples, wherein the test compound is identified as an anti-proliferative anti-bacterial

agent by comparing the effect of contacting the test compound to the first sample, where the exogenous nucleic acid is expressed or introduced, to the effect of contacting the test compound to the second sample, where the exogenous nucleic acid is not present or is not expressed, and the effect of the test compound on the contacted bacterium differs between the first and the second samples, thereby identifying the test compound as an anti-bacterial agent.

91. (NEW) A method of screening for an antimicrobial agent, comprising the steps of:

(a) providing a test compound, a microbial gene essential for viability or growth and a first and a second sample of a microorganism,

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wherein the microbial gene essential for viability or growth is identified by introducing an exogenous nucleic acid into the microorganism and the exogenous nucleic acid is a random fragment or a random sequence, and, identifying the endogenous gene as a gene essential for viability or growth by comparing the proliferation or viability of the microorganism when the exogenous nucleic acid is expressed in or introduced with the proliferation or viability of the microorganism essential for viability or growth when the exogenous nucleic acid is not present or not expressed,

(b) introducing the microbial gene into the microorganism of the first sample;

(c) contacting the test compound with the first sample and the second microorganism samples; and

(d) determining the effect of the test compound on the first and the second microorganism samples, wherein the test compound is identified as an antimicrobial agent by comparing the effect of contacting the test compound to the first sample, where the exogenous nucleic acid is expressed or introduced, to the effect of contacting the test compound to the second sample, where the exogenous nucleic acid is not present or not expressed, and the effect of the test compound on the contacted microorganism differs between the first and the second samples, thereby identifying the test compound as an antimicrobial agent.

92. (NEW) A method of screening for an anti-bacterial agent, comprising the steps of:

(a) providing a test compound, a gene essential for viability or growth and a first and a second sample of a bacterium,

wherein the gene essential for viability or growth is identified by introducing an exogenous nucleic acid into the bacterium and the exogenous nucleic acid is a random fragment or a random sequence, and, identifying the endogenous gene essential for viability or growth by comparing the proliferation or viability of the bacterium when the exogenous nucleic acid is expressed in or introduced with the proliferation or viability of the bacterium when the exogenous nucleic acid is not present or not expressed,

(b) introducing the exogenous gene into the bacterium of the first sample;

(c) contacting the test compound with the first sample and the second bacterial samples; and

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(d) determining the effect of the test compound on the first and the second bacterial samples, wherein the test compound is identified as an anti-bacterial agent by comparing the effect of contacting the test compound to the first sample, where the exogenous nucleic acid is expressed or introduced, to the effect of contacting the test compound to the second sample, where the exogenous nucleic acid is not present or not expressed, and the effect of the test compound on the contacted bacterium differs between the first and the second samples, thereby identifying the test compound as an anti-bacterial agent.

93. (NEW) A method of screening for an antimicrobial agent, comprising the steps of:

(a) providing a test compound, a microbial proliferation gene and a first and a second sample of a first microorganism,

wherein the microbial proliferation gene is identified by introducing an exogenous nucleic acid into the first microorganism and the exogenous nucleic acid has substantial sequence identity to a microbial gene endogenous to the first microorganism and is a random antisense fragment or a random antisense sequence, and, identifying the endogenous gene as a microbial proliferation gene by comparing the proliferation or viability of the first microorganism when the exogenous nucleic acid is expressed in or introduced with the

proliferation or viability of the first microorganism or an equivalent microorganism when the exogenous nucleic acid is not present or not expressed,

(b) introducing the microbial proliferation gene into the first microorganism of the first sample;

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(c) contacting the test compound with the first sample and the second microorganism samples; and

(d) determining the effect of the test compound on the first and the second microorganism samples, wherein the test compound is identified as an antimicrobial agent by comparing the effect of contacting the test compound to the first sample, where the exogenous nucleic acid is expressed or introduced, to the effect of contacting the test compound to the second sample, where the exogenous nucleic acid is not present or is not expressed, and the effect of the test compound on the contacted microorganism differs between the first and the second samples, thereby identifying the test compound as an antimicrobial agent.